

**PATENT**  
(Practitioner's Docket No. IN-5475)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

BRADFORD, Chris  
ZIMMER, Marcy  
O'DONNELL, Ryan  
CAILLOUETTE, Lyle  
RISCHKE, Jennifer

Serial No.: 09/940,748

Filed: August 28, 2001

For: DUAL CURE COATING  
COMPOSITION AND PROCESSES FOR  
USING THE SAME

Group Art Unit: 1711

Examiner: BERMAN, Susan W.

I hereby certify that the attached correspondence is  
being transmitted by facsimile to the Commissioner of  
Patents and Trademarks, USPTO, Alexandria, Virginia  
22202-3514, on February 13, 2004, via transmission to  
facsimile number (703)-872-9306.

  
Marjorie Ellis

**DECLARATION UNDER 37, CFR § 1.132**

Commissioner for Patents  
Alexandria, Virginia 22202-3514

Dear Sir:

I, Lyle Caillouette hereby say and declare that:

I am one the inventor of the above-identified U.S. patent application Serial No.  
09/940,748 filed August 28, 2001.

I have B.S. degrees in Biology received in 1983 and In Chemistry received in  
1989, both from Madonna University, Livonia, Michigan. I have been employed by  
BASF Corp. for the last 17.5 years, working in the area of automotive coatings.

In order to demonstrate the unexpected and advantageous results of a coating as claimed in the above-identified U.S. patent application, coatings according to the invention as set below, having an NCO:OH reactive group ratio of 0.9 was compared to 1.8 for a coating composition prepared according to the example shown in DE 99 141 ( published as PCT Patent application WO 02/074872 A1).

A comparison of the two coating compositions showed that paint loss following gravel testing was significantly lower for the Invention coating in contrast to the Comparative. Results for performance are set forth below.

**Invention:**

Ratio of NCO:OH reactive groups is 0.9

Component	Amount % by Weight
Polyester I <sup>1</sup>	32.10
Radiation curable component <sup>2</sup>	14.90
Polyester Tackifier <sup>3</sup>	2.00
Rheology Solution <sup>4</sup>	4.70
Surfactant	0.11
Conductive Mica	15.8
Talc	6.80
Catalyst <sup>5</sup>	0.20
Photoinitiator	4.0
Solvent	19.39
Total	100

<sup>1</sup>Setal 26-1615 from Akzo Nobel.

<sup>2</sup>Acrylated aliphatic urethane oligomer commercially available from UCB Chemicals as IRR 351.

<sup>3</sup>Polyester adhesive resin based on vinyl chloride, commercially available from Creanova as LTS.

<sup>4</sup>Bentone

<sup>5</sup>Nuodex® LI from OMG

The coating was formulated by combining 100 parts of the coating resin, 8.1 parts solvent and the 16.5 parts of the isocyanurate of HDI. The ratio of NCO:OH reactive groups is 0.9.

**Comparative:**

Component	Amount % by Weight
Ebercryl® 5129 urethane acrylate	35.83
Desmophen polyester polyol	35.83
Photoinitiator Solution	0.90
Tinuvin 400	0.11
Tinuvin 123	0.11
Talc	27.22
Total	100.0

The coating was formulated by combining 279 parts coating resin, 91 parts solvent and 50 parts Roskydal isocyanate crosslinker. The ratio of NCO:OH reactive groups is 1.8.

**Testing of Coatings**

Coatings were applied to panels and subjected to cold gravel testing per SAE J400, Method I. Three pints of gravel per the test method at 70 psi and at a temperature of -25°C. Samples were conditioned to temperature at least 24 hours prior to testing. A rating of less than 5 is a failure. A size rating of C or D (i.e. chips greater than 3mm) is a failure. The results are set forth in Table 1.

Table 1

Sample	Stone Chip Rating		% Paint Loss	
	Invention	Comparative	Invention	Comparative
1	5B	6D	0.43	0.83
2	6B	6D	0.27	1.28
3	6B	6D	0.16	1.50

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true.

I understand that willful false statements and the like made herein are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code, and may jeopardize the validity of the application or any patent issuing thereon.

Respectfully Submitted,

  
Lyle Caillouette

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